SANTA CRUZ BIOTECHNOLOGY, INC.

Pleckstrin (25): sc-136042

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Activation of protein kinase C (PKC) in platelets results in immediate phosphorylation of Pleckstrin (previously called 40K or P47), the major PKC substrate in platelets. Pleckstrin contains a Ca^{2+}-binding "EF-hand" structure and PKC phosphorylation sites at Ser 113 and Ser 117. The N- and C-termini of Pleckstrin contain two Pleckstrin homology domains (PH), which mediate protein-protein and protein-lipid interactions. Pleckstrin is highly expressed in human neutrophils. Pleckstrin is rapidly phosphorylated following treatment of neutrophils in response to inflammatory stimuli, probably by non-conventional PKC isoforms δ or ζ, which are expressed in human neutrophils. Phosphorylation by non-conventional PKC isoforms induces a conformational change in Pleckstrin that promotes its interaction with membranes and/or with the cytoskeleton, serving to target proteins or lipids recognized by PH domains to sites where they can contribute to the microbicidal response.

REFERENCES

1. Tyers, M., Rachubinski, R.A., Stewart, M.I., Varrichio, A.M., Shorr, R.G., Haslam, R.J. and Harley, C.B. 1988. Molecular cloning and expression of the major protein kinase C substrate of platelets. Nature 333: 470-473.
2. Tyers, M., Haslam, R.J., Rachubinski, R.A. and Harley, C.B. 1989. Molecular analysis of Pleckstrin: the major protein kinase C substrate of platelets. J. Cell. Biochem. 40: 133-145.
3. Yoon, H.S., Hajduk, P.J., Petros, A.M., Olejniczak, E.T., Meadows, R.P. and Fesik, S.W. 1994. Solution structure of a Pleckstrin-homology domain. Nature 369: 672-675.
4. Abrams, C.S., Zhao, W., Belmonte, E. and Brass, L.F. 1995. Protein kinase C regulates Pleckstrin by phosphorylation of sites adjacent to the N-terminal Pleckstrin homology domain. J. Biol. Chem. 270: 23317-23321.
5. Craig, K.L. and Harley, C.B. 1996. Phosphorylation of human Pleckstrin on Ser-113 and Ser-117 by protein kinase C. Biochem. J. 314: 937-942.
6. Brumell, J.H., Craig, K.L., Ferguson, D., Tyers, M. and Grinstein, S. 1997. Phosphorylation and subcellular redistribution of Pleckstrin in human neutrophils. J. Immunol. 158: 4862-4871.
7. Cmarik, J.L., Hegamyer, G., Gerrard, B., Dean, M. and Colburn, N.H. 2000. cDNA cloning and mapping of mouse Pleckstrin (Plek), a gene upregulated in transformation-resistant cells. Genomics 66: 204-212.

CHROMOSOMAL LOCATION

Genetic locus: PLEK (human) mapping to 2p14; Plek (mouse) mapping to 11 A2.

SOURCE

Pleckstrin (25) is a mouse monoclonal antibody raised against amino acids 2-16 of Pleckstrin of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Pleckstrin (25) is recommended for detection of Pleckstrin of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)]; not recommended for immunoprecipitation.

Suitable for use as control antibody for Pleckstrin siRNA (h): sc-106419, Pleckstrin siRNA (m): sc-152303, Pleckstrin shRNA Plasmid (h): sc-106419-SH, Pleckstrin shRNA Plasmid (m): sc-152303-SH, Pleckstrin shRNA (h) Lentiviral Particles: sc-106419-V and Pleckstrin shRNA (m) Lentiviral Particles: sc-152303-V.

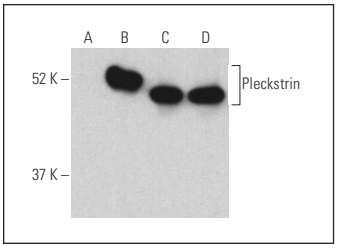
Molecular Weight of Pleckstrin: 40 kDa.

Positive Controls: Pleckstrin (h2): 293T Lysate: sc-170743, HEL 92.1.7 cell lysate: sc-2270 or THP-1 cell lysate: sc-2238.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Pleckstrin (25): sc-136042. Western blot analysis of Pleckstrin expression in non-transfected 293T: sc-117752 (**A**), human Pleckstrin transfected 293T: sc-170743 (**B**), HEL 92.1.7 (**C**) and THP-1 (**D**) whole cell lysates. Detection reagent used: m-IgGκ BP-HRP: sc-516102.

SELECT PRODUCT CITATIONS

1. Yoon, S.J., Park, Y.J., Kim, J.S., Lee, S., Lee, S.H., Choi, S., Min, J.K., Choi, I. and Ryu, C.M. 2018. *Pseudomonas syringae* evades phagocytosis by animal cells via type III effector-mediated regulation of Actin filament plasticity. Environ. Microbiol. 20: 3980-3991.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.